In the Claims:

1. (canceled)

2. (canceled)

3. (canceled)

4. (canceled)

5. (canceled)

6. (canceled)

7. (canceled)

8. (canceled)

9. (canceled)

10. (canceled)

11. (canceled)

12. (canceled)

13. (previously added) A method for atomizing a formative fluid to form a selected material, comprising:

providing in a liquid state and at a first selected temperature and a first selected pressure, the formative fluid which is capable of forming the selected material;

directing the formative fluid in the liquid state to a fluid conduit having an input end and an output end, wherein the output end includes an outlet port being oriented to direct the formative fluid to a material formation region;

regulating the temperature of said formative fluid as it passes through the fluid conduit so as to maintain at least some of the formative fluid in the fluid conduit in the liquid state at a second selected temperature which is below the supercritical temperature (Tc) of the formative fluid, the second selected temperature being selected to promote or control atomization of the formative fluid when it exits the output end of the fluid conduit; and

directing the liquid formative fluid through the outlet port of the fluid conduit into the formation region so as to produce an atomized spray.

14. (previously added) The method according to Claim 13 further comprising the step of pressurizing the formative fluid in the liquid state to a second selected pressure and wherein said material formation region is at a third selected pressure which is below the second selected pressure.

15. (previously added) The method according to Claim 13 wherein said formative fluid comprises a solution of at least one formative compound in a carrier liquid, the formative compound being capable of forming said selected material in the formation region.

16. (previously added) The method according to Claim 15 wherein said formative compound is capable of reacting in the formation region to form the selected material.

17. (previously added) The method according to Claim 16 wherein said atomized spray is supplied with sufficient energy in the formation region to promote reaction of the formative compound to form the selected
material.

18. (previously added) The method according to Claim 13 wherein said formative fluid forms a powder in the formation region.

19. (previously added) The method according to Claim 13 wherein a substrate is positioned within the formation region such that the selected material forms as a coating on the substrate.

20. (previously added) The method of claim 19, wherein the material that coats the substrate comprises a metal, an oxide, a carbonate, a sulfate, a phosphate, a nitride, a carbide, a boride, or a combination thereof.

21. (previously added) The method of claim 19, further comprising, cooling the substrate using a substrate cooling means.

22. (previously added) The method of claim 19, wherein the material that coats the substrate comprises a carbonaceous material, a metal, an oxide, or a combination thereof.

23. (previously added) The method of claim 19, wherein the material that coats the substrate comprises a carbonaceous material, an organic material, a polymeric material, or a combination thereof.

24. (currently amended) The method of claim 19, wherein the material that coats the substrate comprises a graded composition ~~after the coating process~~.

25. (currently amended) The method of claim 13, wherein the material that is formed comprises an amorphous composition ~~after the forming process~~.

26. (previously added) The method according to Claim 13 further comprising a gas supply means and wherein the gas supply means admixes at least one gas reactive with at least one component of the formative fluid to form the selected material.

27. (previously added) The method according to Claim 17 wherein the energy is a flame source which causes combustion of at least one component of said formative fluid.

28. (previously added) The method of claim 27, wherein the atomized spray has a spray velocity and wherein the spray velocity is greater than the flame speed of the flame source, and the method further comprises the step of providing one or more ignition assistance means for igniting the spray.

29. (currently amended) The method of claim 17 ~~13~~, wherein the energy ~~source~~ comprises a thermal, photon or plasma source.

30. (previously added) The method of claim 27, wherein the pressure of the formation region is low enough such that the flame source has a temperature of less than 1000 °C.

31. (previously added) The method according to Claim 13 wherein the pressure of the formation region is at ambient pressure.

32. (previously added) The method according to Claim 13 wherein the pressure of the formation region is above ambient pressure.

33. (previously added) The method according to Claim 13 wherein the pressure of the formation region is below ambient pressure.

34. (previously added) The method of claim 13, wherein the pressure of the formation region is above 20 torr.

35. (previously added) The method of claim 13, wherein the formative fluid is in part liquefied or dissolved gasses.

36. (previously added) The method of claim 13, wherein the formative fluid further comprises butanol, methanol, isopropanol, toluene, or a combination thereof.

37. (previously added) The method of claim 13, wherein the providing step further comprises, providing a reagent solution in a pressurized container, and contacting a standard temperature and pressure gas with the reagent solution at a selected pressure, to form the formative fluid.

38. (previously added) The method of claim 37, wherein the reagent solution contains a reagent and the concentration of the reagent in the formative fluid is between 0.0005 M and 0.01 M.

39. (previously added) The method of claim 37, wherein the reagent solution contains a reagent and the concentration of the reagent in the formative fluid is between 0.01 M and 1 M.

40. (previously added) The method of claim 13, wherein the output end of the conduit further comprises a fluid introduction port and the method further comprises, prior to directing the formative fluid through the outlet port of the conduit, adding additional fluid to the formative fluid through the fluid introduction port to thereby form a combined solution having a reduced critical temperature.

41. (previously added) The method of claim 13, wherein the formative fluid comprises one or more reagents and a carrier, and each of the one or more reagents has a vapor pressure of no less than about 25% of the vapor pressure of the carrier.

42. (previously added) The method of claim 13, further comprising flowing a selected sheath gas around the atomized spray thereby decreasing entrained impurities and maintaining a favorable deposition environment.

43. (previously added) The method of claim 13, wherein the output end of the fluid conduit further comprises a temperature regulating means positioned thereon and the step of regulating the temperature comprises regulating the temperature of the formative fluid at the output end.

44. (previously added) The method of claim 13, wherein the step of regulating the temperature comprises providing means for resistively heating the fluid conduit by applying thereto an electric current of a selected voltage from an electric current source.

45. (previously added) The method of claim 13, wherein the selected material is a powder, and the formative fluid comprises a reagent, and said reagent precipitates to form said powder.

46. (previously added) The method of claim 13, wherein the selected material is a powder, and the formative fluid comprises a reagent, and said reagent chemically reacts to form said powder.

47. (previously added) The method of claim 13, wherein the majority of the droplets that make up the atomized spray have a droplet size of less than 2 microns.

48. (canceled)

49. (canceled)